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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,559	08/07/2001	Maurice Karras	069558.0102	3036

7590 01/29/2004
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EXAMINER

TRAN, HIEN THI

ART UNIT PAPER NUMBER

1764

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,559

Applicant(s)

KARRAS ET AL.

Examiner

Hien Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: attached 1449

DETAILED ACTION***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 30, 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 30, the language of the claim is directed to method limitation which renders the claim vague and indefinite as it is unclear as to what structural limitation applicants are attempting to recite. See claim 47 likewise.

In claim 47, line 2 the "packing" has no clear antecedent basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 27-28, 33-34, 36, 44-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Risse et al (6,063,352).

With respect to claims 27-28, 34, 36, 44-45, Risse et al disclose a multistage scrubber for removing sulfur dioxide from flue gas comprising:

a vertically-oriented shell 7, the shell having an upper end and a lower end, the shell further having a flue gas entry port at the lower end, a flue gas exit port 7a at the upper end such

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that the flue gas enters the shell via the flue gas entry port and moves in counter-flow exchange to a fluid, an interior cavity, a vertical axis and an interior surface;

N number of liquid distributor headers 17, 14, 22 within the interior cavity of the shell, so located such that the liquid distributor headers are capable of receiving fluid;

a plurality of liquid distributors (nozzles) in fluid communication with the liquid distributor headers and capable of distributing fluid from the liquid distributor headers to the interior cavity of the shell;

N-1 number of scrubber stage separators numbered 2 to N along the vertical axis, each of the separators located in a plane substantially perpendicular to the vertical axis, each separator having an upper surface and containing packing 8, 21 (col. 5, lines 58-61);

a plurality of fluid exit ports capable of withdrawing liquid from the upper surface of a particular separator;

N number of stages numbered 1 to N wherein each of the stages numbered 2 to N comprises the corresponding numbered liquid distributor header 14, 22, the corresponding numbered scrubber stage separator 8, 21, and at least one of the fluid exit ports 10, 24 and stage 1 comprises the corresponding numbered distributor header 17 and at least one fluid exit port 18; and

a scrubber product line (branch from 18) capable of removing fluid from the multistage scrubber (Fig. 1, col. 5, line 21 to col. 6, line 41).

With respect to claim 33, Risse et al further discloses a liquid repository 6.

Instant claims 27-28, 33-34, 36, 44-45 structurally read on the apparatus of Risse et al.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 29-32, 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Risse et al (6,063,352) in view of Cheremisinoff (3,944,402).

With respect to claims 29-32, 46-48, Risse et al is silent as to the specific material for the packing, the shell. However, Cheremisinoff discloses the use of stainless steel for the packing and the shell. It would have been obvious to one having ordinary skill in the art to select an appropriate material for the packing and shell, as evidenced by Cheremisinoff, to withstand the corrosive reactants and products therein and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In *re Leshin*, 125 USPQ 416.

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8. Claims 35, 37-43, are rejected under 35 U.S.C. 103(a) as being unpatentable over Risse et al (6,063,352).

With respect to claim 35, Risse et al discloses that the liquid distributor connected to the header of stage 1 comprises a nozzle.

With respect to claim 37, Risse et al disclose a tank 20, each tank having an interior surface and a fluid discharge port, the tank being in fluid communication with the distributor header; and a liquid removal line 24.

With respect to claim 39, Risse et al discloses water line 25, ammonia solution header 12.

With respect to claim 40-43, Risse et al discloses drain header (lines between two stages).

The use of more than one set of elements is within the purview of one having ordinary skill in the art during routine experimentation and optimization of the system and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Response to Arguments

9. Applicant's arguments filed 10/30/03 have been fully considered but they are not persuasive.

Applicants argue that Risse fails to teach a vertically oriented shell 7 having an upper end; a lower end, a flue gas entry port located at the lower end and a flue gas exit port located at the upper end such that the flue gas enters the shell via the flue gas entry port and moves in counter-flow exchange to a fluid, ..." as recited in instant claims 27 and 44 and therefore Risse cannot anticipate applicants' invention, e.g. Risse teaches a uniflow treatment (col. 5, lines 21-25) while the instant claim requires a counter-current exchange between the upward moving flue

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gas with the fluid. Such contention is not persuasive as Risse does disclose a vertically oriented shell having an upper end; a lower end, a flue gas entry port (bottom left, near reference numerals 6 and 9) located at the lower end and a flue gas exit port 7a located at the upper end such that the flue gas enters the shell via the flue gas entry port and moves in counter-flow exchange to a fluid, ... (see, for example, col. 2, lines 45-49). The uniflow treatment set forth in col. 5, lines 21-25 is used for the flue gas treatment before entering the scrubber 7.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HT
January 26, 2004

Hien Tran
Primary Examiner
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